

**TABLE 4-5**

Predicted Cumulative Changes in Groundwater Discharge versus Baseline for Case D

Hydrologic Area/Feature	Highest Annual Discharge Change			Highest Summer Discharge Change	
	<i>cfs</i>	%	<i>month(s)</i>	<i>cfs</i>	%
<b>Nisqually River</b>					
at Thompson Creek	-0.63	2.0	Mar	-0.48	2.4
at Nisqually Indian Reservation	-0.81	1.6	Mar	-0.72	1.9
at RM 4.3	-1.00	1.2	Aug	-1.00	1.6
<b>Deschutes River</b>					
at Silver Creek	-0.63	1.7	Mar	-0.47	4.0
at Spurgeon Creek	-0.87	1.5	Feb-Mar	-0.69	5.9
at Tumwater Falls	-0.95	1.1	Feb	-0.74	3.7
<b>McAllister Valley</b>					
at Medicine Creek	-0.68	1.1	Aug	-0.68	1.1
<b>Woodland Creek</b>					
at Hicks Lake outfall	-0.07	10.5	Mar-Oct	-0.07	10.5
at Henderson Inlet	-0.08	6.2	Sep-Oct	-0.08	3.2

**Note:** Negative rates indicate monthly groundwater discharge depletion versus the baseline case. % - percentage of baseline discharge depleted. *month* – month in which highest loss would occur. Summer = Jun-Sep inclusive.

#### 4.4.2 Groundwater Level Changes

Figures 4-20 through 4-23 show the model-predicted monthly groundwater levels in four key wells for the New Baseline case, Case A and Case D simulations.

- Downtown Well 1 – one of Yelm’s two existing downtown wells, completed in the Vashon Outwash aquifer (Figure 4-20).
- SW Yelm Well 1 – one of the five planned wells from the new wellfield (Figure 4-6), to be completed in the upper part of the deep, undifferentiated aquifer (Figure 4-21).
- City of Rainier Well – one of several municipal wells located close to the downtown area of Rainier, completed in the Pre-Vashon Gravel aquifer (Figure 4-22).
- Schoepfer Well – a private well, located north of the planned wellfield area, completed in the deep, undifferentiated aquifer (Figure 4-23).

The future groundwater level in Yelm’s downtown Well 1 will increase by up to 2 feet in response to Case A, and decrease by up to 1 foot from Case D. Neither case is expected to cause local groundwater problems in terms of flooding (for Case A) or excessively low levels in other wells (for Case D).

The predicted changes in water levels in the deep aquifer in the planned wellfield area range between 10 and 23 feet for Case A, and from 6 to 13 feet for Case D. This long-term drawdown is expected to be manageable in terms of well construction and operation. The predicted water level changes in the City of Rainier well range between 1.7 and 2.6 feet for Case A, and between 1.3 and 1.9 feet for Case D. The predicted water-level changes in the Schoepfer Well range between 0.8 and 1.2 feet for Case A, and between 0.7 and 1.0 feet for Case D. These long-term drawdowns are not expected to significantly impact the operation of either well.